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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/513,441	02/25/2000	Mark E. Boettcher	10001380-1	7276

22879 7590 11/10/2005

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EXAMINER	
BRINICH, STEPHEN M	
ART UNIT	**PAPER NUMBER**
2624	

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
09/513,441			

EXAMINER	
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	20051101

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Commissioner for Patents

Office Action Summary	Application No.	Applicant(s)	
	09/513,441	BOETTCHER ET AL.	
	Examiner	Art Unit	
	Stephen M. Brinich	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,5,7-10,12,13,15-18,20,21,23-26,28,29 and 31-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,5,7-10,12,13,15-18,20,21,23-26,28,29 and 31-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The PTO-1449 form requested by Applicant (for the Information Disclosure Statement filed 4/9/01) appears to be absent from the Patent Office file. Applicant is respectfully requested to supply another copy.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 26, 28-29, & 31-33 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 26, 28-29, & 31-33 are drawn to functional descriptive material NOT claimed as residing on a computer readable medium. MPEP 2106.IV.B.1(a) (Functional Descriptive Material) states:

> Data structures not claimed as embodied in a computer-readable medium are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer.
>
> Such claimed data structures do not define any structural or functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized.

Claims 26, 28-29, & 31-33, while defining a computer program, does not define a "computer-readable medium" and is thus non-statutory for that reasons. A computer program can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" in order to make the claim statutory.

> In contrast, a claimed computer-readable medium encoded with the data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory." - MPEP 2106.IV.B.1(a)

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-2, 4-5, 7, 9-10, 12-13, 15, 17-18, 20-21, 23, 25-26, 28-29, 31, & 33, insofar as claims 26, 28-29, 31, & 33 are understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hines in view of Murphy.

Re claims 1 & 4-5, Hines's printing method discloses receiving a data stream from a content source external to the

printer (Figure 3 item 118 & 120, wherein image data from application program is sent to printer system), gathering a first portion of data from the stream (Figure 3, item 312; column 9, line 40-53, wherein one or more data bands are gathered in the buffer), printing the first portion while continuing to receive the stream (Figure 3; item 310 & 110; column 9 line 61 - column 10, line 3; column 10, lines 15-19 wherein language monitor continues to receive data band while printing), and gathering a second portion of data from the stream (Figure 3; item 312 & 314; column 10, lines 16-17), where data received by language monitor is gathered in buffer similar to the step of gathering the first portion of data); and printing the second portion after printing the first portion (Figure 3, item 314, 316, & 110; column 10 lines 18-19, wherein data from buffer is continually retrieved for printing).

Further re claims 1, 4-5, & 28-29, Hines fails to disclose the determination of a block size of the first data portion, wherein the method of determination includes pinging the content source to calculate a data transfer speed and adjusting the block size based upon the data transfer speed, adjusting the block size comprising the steps of setting a first block size if data transfer speed is a first speed and a setting a second

block size if data transfer speed is a second speed greater than the first speed.

However, the printing method of Murphy includes the steps of: determining the block size of first portion before print engine starts printing (column 15, lines 42-44, wherein the threshold value is the block size in buffer); pinging the content source to calculate data transfer speed (i.e. link speed) (column 15, lines 48-50 mentions the evaluating of data transfer rate and further in column 13, lines 26-45 wherein Murphy fully describes the operation of "pinging" i.e. the transmission of data from the content source and acknowledgment of receipt by the printer); and adjusting the block size based on the data transfer speed (column 11, lines 45-65, column 12, lines 37-55, and column 15, lines 42-50 describe the calculation of threshold buffer size based on data transfer speed such that higher data transfer speed results in larger threshold buffer size); setting a first block size if data transfer is one speed or a second block size if data transfer speed is another speed (column 15, lines 42-50 wherein setting the threshold value for the buffer size can be interpreted as the conditional setting of block sizes).

Murphy further discloses (column 11, lines 41-48; column 15, line 42) that this data amount is set for each page, and

thus would be adjusted during the printing of a multi-page document (in any case where the calculated data amount for one page differed from that for the preceding page).

Hines and Murphy are combinable because they are from the same field of endeavor i.e. parallel processing of print jobs.

At the time of invention, it would have been obvious to combine the adaptive data block size determination step with the band printing method of Hines. The motivation to do so would have been to: a) minimize communication between client processor and printer if many client processors are connected to the printer in a network; b) set the most efficient data block size to be sent for printing based on data transfer rate between printer and client processor so as to achieve the goal in (a) using a well-utilized method of pinging destination device; c) prevent printer buffer overflow when there is a backlog of print jobs in a network printer by setting smaller data blocks; d) maximizing use of printing resources by continuously and simultaneously buffering and printing data.

Re claim 2, Hines's printing step of gathering a second portion is started during the step of printing the first portion (Figure 3, item 312, 314, 316 & 110; column 10 line 15-21, wherein buffer gathers second portion of data received by

spooler thread while write thread processes and sends data for printing).

Re claim 7, Hines further discloses storing the second portion of the file in a memory source prior to the step of printing (Figure 3 item 312, column 9 line 46- 53 explains storing the first band in memory which thereafter stores subsequent bands) and retrieving the second portion from the memory source after the step of printing the first portion (column 9, line 58-61; column 10 line 15-19, wherein subsequent portions follow the step of retrieving and printing first data portion).

Re claim 9, Hines's method further includes the gathering at least one additional portion of data from the stream and printing the at least one additional portion of data (column 10, line 15-27; Figure 3 item 312 & 314, wherein additional bands of data is continually gathered and printed).

Re claims 10, 12-13, 18, & 20-21, in addition to the elements described above re claims 1 & 4-5, Hines discloses the method of receiving a first portion of the file from a content source external to the printer (Figure 3, item 114, 120, 206, & 310; column 9 line 36-38, 46-53); printing the first portion (Figure 3 item 314 & 110, column 9, line 57- 61); receiving a second portion of the file from the content source during the

step of printing the first portion (Figure 3, item 206, 310; column 10, line 15-17); and printing the second portion after printing the first portion (Figure 3 item 314 110, column 10 line 17-21).

Further re claims 10, 12-13, 18, & 20-21, Hines fails to disclose the determination of a block size of the first data portion, wherein the method of determination includes pinging the content source to calculate a data transfer speed and adjusting the block size based upon the data transfer speed, adjusting the block size comprising the steps of setting a first block size if data transfer speed is a first speed and a setting a second block size if data transfer speed is a second speed greater than the first speed.

However, the printing method of Murphy includes the steps of: determining the block size of first portion before print engine starts printing (column 15, lines 42-44, wherein the threshold value is the block size in buffer); pinging the content source to calculate data transfer speed (i.e. link speed) (column 15, lines 48-50 mentions the evaluating of data transfer rate and further in column 13, lines 26-45 wherein Murphy fully describes the operation of "pinging" i.e. the transmission of data from the content source and acknowledgment of receipt by the printer); and adjusting the block size based

on the data transfer speed (column 11, lines 45-65, column 12, lines 37-55, and column 15, lines 42-50 describe the calculation of threshold buffer size based on data transfer speed such that higher data transfer speed results in larger threshold buffer size); setting a first block size if data transfer is one speed or a second block size if data transfer speed is another speed (column 15, lines 42-50 wherein setting the threshold value for the buffer size can be interpreted as the conditional setting of block sizes). This operation is carried out for each page (and thus recalculates the block size during a multi-page print run).

Hines and Murphy are combinable because they are from the same field of endeavor i.e. parallel processing of print jobs.

At the time of invention, it would have been obvious to combine the adaptive data block size determination step with the band printing method of Hines. The motivation to do so would have been to: a) minimize communication between client processor and printer if many client processors are connected to the printer in a network; b) set the most efficient data block size to be sent for printing based on data transfer rate between printer and client processor so as to achieve the goal in (a) using a well-utilized method of pinging destination device; c) prevent printer buffer overflow when there is a backlog of print jobs in a network printer by setting smaller data blocks; d)

maximizing use of printing resources by continuously and simultaneously buffering and printing data.

Re claims 18, 23, & 25, the printing system of Hines further discloses the print data (Figure 3, item 120) from the content source remote from client system (Figure 3, item 114, content source is application program in operating system) which partitions print data into bands or portions of data (Figure 3, item 206; column 9 line 36-46), wherein partitioning into data bands is done by spooler); transferring a first portion of the plurality of portions from the content source to the client system (Figure 3 item 310 & 312; column 9 line 42-44, wherein language monitor receives data band that spooler sends); printing the first portion (Figure 3 item 314,110, column 9 line 57-61); transferring a second portion from the content source (Figure 3, item 206 & 310; column 10 line 15-17); printing the second portion after printing the first portion (Figure 3 item 314 & 110; column 10 line 17-21).

This is similar to the method of claim 10 whereby portions of data is being sent to the printer or printing system. A band of data can be defined as a block of data transmitted as a variable unit over a dedicated connection medium according to column 9, line 44-46.

Re claims 15 & 23, as described above re claim 7, Hines further discloses storing the second portion of the file in a memory source prior to the step of printing (Figure 3 item 312, column 9 line 46- 53 explains storing the first band in memory which thereafter stores subsequent bands) and retrieving the second portion from the memory source after the step of printing the first portion (column 9, line 58-61; column 10 line 15-19, wherein subsequent portions follow the step of retrieving and printing first data portion).

Re claims 17 & 25, as described above re claim 9, Hines's method further includes the gathering at least one additional portion of data from the stream and printing the at least one additional portion of data (column 10, line 15-27; Figure 3 item 312 & 314, wherein additional bands of data is continually gathered and printed).

Re claims 26, 28-29, 31, & 33, Hines discloses (Figure 3 item 114 & 118; column 18, lines 26-52) the use of a computer executing a stored program to implement the printing arrangement described above re claims 1 & 4-5.

Further re claims 26, 28-29, 31, & 33, Hines fails to disclose the determination of a block size of the first data portion, wherein the method of determination includes pinging the content source to calculate a data transfer speed and

adjusting the block size based upon the data transfer speed, adjusting the block size comprising the steps of setting a first block size if data transfer speed is a first speed and a setting a second block size if data transfer speed is a second speed greater than the first speed.

However, the printing method of Murphy includes the steps of: determining the block size of first portion before print engine starts printing (column 15, lines 42-44, wherein the threshold value is the block size in buffer); pinging the content source to calculate data transfer speed (i.e. link speed) (column 15, lines 48-50 mentions the evaluating of data transfer rate and further in column 13, lines 26-45 wherein Murphy fully describes the operation of "pinging" i.e. the transmission of data from the content source and acknowledgment of receipt by the printer); and adjusting the block size based on the data transfer speed (column 11, lines 45-65, column 12, lines 37-55, and column 15, lines 42-50 describe the calculation of threshold buffer size based on data transfer speed such that higher data transfer speed results in larger threshold buffer size); setting a first block size if data transfer is one speed or a second block size if data transfer speed is another speed (column 15, lines 42-50 wherein setting the threshold value for

the buffer size can be interpreted as the conditional setting of block sizes).

Hines and Murphy are combinable because they are from the same field of endeavor i.e. parallel processing of print jobs.

At the time of invention, it would have been obvious to combine the adaptive data block size determination step with the band printing method of Hines. The motivation to do so would have been to: a) minimize communication between client processor and printer if many client processors are connected to the printer in a network; b) set the most efficient data block size to be sent for printing based on data transfer rate between printer and client processor so as to achieve the goal in (a) using a well-utilized method of pinging destination device; c) prevent printer buffer overflow when there is a backlog of print jobs in a network printer by setting smaller data blocks; d) maximizing use of printing resources by continuously and simultaneously buffering and printing data.

6. Claims 8, 16, 24, & 32, insofar as claim 32 is understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hines in view of Murphy as applied to claims 1, 10, 18, & 26 above, and further in view of Cavill et al.

Re claims 8, 16, 24, & 32, Hines describes the transfer of a first portion of the data file from a remote content source,

but does not describe the step of downloading the first portion from a server via an Internet communications system.

However, Cavill describes the transfer of files between computers operating within the Internet (column 5, line 5-7).

Hines and Cavill are combinable because they are from the same field of endeavor i.e. print job control.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Cavill with the teachings of Hines, as Cavill is an obvious extension of Hines's teachings that describes the downloading of data to a printer in the network (column 2 line 2-7). Cavill specifies Hines's network to be an Internet. The motivation for doing so would have been to utilize the largest wide area network available i.e. Internet, which allows access to the largest data resources. Since the Internet is the most utilized medium of data sources and file transfer among all establishments today, it would be obvious and logical to implement the system of Hines within an Internet environment.

Further re claim 32, Hines discloses (Figure 3 item 114 & 118; column 18, lines 26-52) the use of a computer executing a stored program to implement the described printing arrangement.

Response to Arguments

7. Applicant's arguments filed 5/9/05 have been fully considered but they are not persuasive.

Re claims 1, 10, 18, & 26 (and dependent claims 2, 4-5, 7, 9, 12-13, 15, 17, 20-21, 23, 25, 28-29, 31, & 33), Applicant argues (5/9/05 Response: page 8, line 16 - page 9, line 25; page 10, lines 3-9) that the "pinging" operation of the present invention is a request from the system to an external content source in order to obtain information pertaining to the data transfer rate between the external content source and the system (as opposed to the corresponding operation of the Murphy reference, which obtains information pertaining to the data transfer rate between the host computer and the printer).

However, the "content source" of the present claims is described as "external" in the sense that it is external *to the printer* (claim 1, lines 3-4; claim 10, lines 3-4; claim 26, lines 3-4) or external to a "client system" which is not defined in such a way as to exclude the reading of a host computer supplying data to a printer (claim 18, line 2). Thus, the claimed "pinging" operation is readable on the Murphy operation of obtaining information pertaining to the data transfer rate between the host computer and the printer.

Re claims 1, 10, 18, & 26 (and dependent claims 2, 4-5, 7, 9, 12-13, 15, 17, 20-21, 23, 25, 28-29, 31, & 33), Applicant further argues (5/9/05 Response: page 9, line 26 - page 10, line 2) that the present invention describes to a calculated data transfer rate whereas Murphy describes an estimated data transfer rate.

However, insofar as Applicant's disclosed invention depends on a physical measurement (the result of pinging the server 106) as a basis for its calculated data transfer rate, the result is inherently of limited precision (i.e. it is subject to the error of the physical measurement), and is thus also necessarily an "estimated" value.

Re claims 8, 16, 24, & 32, Applicant argues (5/9/05 Response: page 10, lines 15-24) that these claims are allowable by virtue of their dependence from claims 1, 10, 18, & 26, which are argued by Applicant to be allowable.

Examiner has addressed Applicant's arguments re claims 1, 10, 18, & 26 above.

Conclusion

8. Any inquiry concerning the contents of this communication or earlier communications from the examiner should be directed to Stephen M. Brinich at 571-272-7430.

Any inquiry relating to the status of this application or proceeding or any inquiry of a general nature concerning application processing should be directed to the Tech Center 2600 Customer Service center at 571-272-2600 or to the USPTO Contact Center at 800-786-9199 or 703-308-4357.

The examiner can normally be reached on weekdays 7:00-4:30, alternate Fridays off.

If attempts to contact the examiner and the Customer Service Center are unsuccessful, supervisor David Moore can be contacted at 571-272-7437.

Faxes pertaining to this application should be directed to the Tech Center 2600 official fax number, which is 571-273-8300 (as of July 15, 2005).

Hand-carried correspondence may be delivered to the Customer Service Window, located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Stephen Brinich

Stephen M Brinich
Examiner
Art Unit 2624

smb
November 2, 2005